Detach

HVLP PAINT SPRAY SYSTEM

AirVerter

User's Manual

Detach III
Model DT-3000

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Compliance • Quality • Performance • Reliability

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Please Read This Owner's Manual *BEFORE* Using Your Detach III™ Spray Gun

DO NOT OPERATE THIS EQUIPMENT WITHOUT USING PROPER PERSONAL SAFETY EQUIPMENT INCLUDING RESPIRATOR, GOGGLES AND SAFETY CLOTHING. OBSERVE ALL PRECAUTIONS RELATED TO SPRAYING.

WARNING

THIS EQUIPMENT IS OPERATED USING PRESSURIZED AIR. ALWAYS DISCONNECT SPRAY GUN FROM AIR AND FLUID HOSES AND DEPRESSURIZE SYSTEM PRIOR TO ANY MAINTENANCE OR DISASSEMBLY PROCEDURE.

WARRANTY

Smith Eastern Corporation warrants to the Purchaser that the Detach III™ DT-3000 Spray Gun is free from defects in material or workmanship under normal use and service for a period of twelve (12) months from the date of purchase. Should any failure appear during this period, Smith Eastern shall, if given prompt written notice by the Purchaser, correct such nonconformity by repair or replacement of the nonconforming part, F.O.B. Smith Eastern's repair facility. Repair parts are warranted for ninety (90) days from the date of shipment, but repairs or replacements to original equipment shall not renew or extend the warranty period of such equipment. Equipment and parts furnished by Smith Eastern but manufactured by others shall be limited to the warranty offered by the manufacturer thereof.

Smith Eastern reserves the right to limit this warranty in cases of misuse or abuse. Any modifications to spray guns or recommended procedures will void the warranty.

The foregoing warranty is exclusive and in lieu of other warranties of quality or performance, expressed, implied or statutory, including any warranties of merchantability or of fitness for a particular purpose.

Why Airverter® Spray Gun Systems Work Better

To accomplish effective atomization of a liquid at low pressure (below 10 PSI), it is necessary to substantially decrease pressure (PSI) and increase air volume (CFM). **The patented Detach III Spray Gun accomplishes expansion of air volume through its unique enlarged internal passages.** These enlarged air passages allow high-pressure input air to expand almost 300%, dramatically increasing volume.

AirVerter® systems, by design, do not exceed 10 PSI at the spray head and prevent the operator from taking AirVerter® spray guns out of compliance with EPA and California's South Coast Air Quality Management District (SCAQMD) regulations.

EQUIPMENT REQUIREMENTS

Air Compressor

Air compressors used with AirVerter® Spray Guns must be able to HOLD a minimum of 40 PSI while spraying. ***Note***: Position a pressure gauge in the air hose nearest the spray gun to be assured of the PSI required to satisfactorily spray your coating.

High Pressure Air Hose

A. Air hose lengths up to 50 feet **MUST** have an I.D. of 3/8" including fittings.

B. Air hose lengths greater than 50 feet **MUST** have an I.D. of 1/2" including fittings.

Paint Cup, Pressure Pot or Diaphragm Pump

Follow manufacturer's instructions.

OPERATING INSTRUCTIONS

A. The Detach III™ Model DT-3000 Spray Gun operates with the trigger controlling both the fluid flow and air flow. The Detach III™ Spray Gun does not require an AirVerter® Inductor Assembly between the gun and the compressed air supply.

B. **Consult the *Nozzle and Air Cap Selection Guide* to select the proper combination for the coating and finish quality desired. Too much pressure will create unnecessary overspray!**

Using a One-Quart Paint Cup

A. Attach the 1-Quart Paint Cup (AV-188) to the Fluid Fitting (DT-3113) on the bottom of the gun and tighten. Attach the One-Way Check Valve (DT-021) on the cup lid to the Air Pressure Fitting (DT-005) on the gun.

B. The 1-Quart Paint Cup must be air tight, clean and free of obstructions.

- The seal between the paint cup lid gasket and the lip of the cup **MUST BE** airtight.
- The One-Way Check Valve supplying air to the paint cup **MUST BE** clean and free of obstructions.

C. **Never fill a 1-Quart Paint Cup more than ¾ full**. This allows sufficient air space in the cup for pressurization. Using a Cup Liner (AV-020) will reduce clean-up time and solvent usage.

D. Attach an air hose to the Male Nipple Fitting (AV-220A) at the base of the gun handle.

Using a Two-Quart or Larger Remote Pressure Pot or Diaphragm Pump

A. Remove the Air Pressure Fitting (DT-005) and replace it with the Socket Head Cap Screw (DT-004) found in your parts kit.

B. Attach the fluid hose from your pressure pot to the Fluid Fitting (DT-3113) on the gun and tighten.

C. Attach an air hose to the Male Nipple Fitting (AV-220A) at the base of the gun handle.

Before Spraying

A. Follow the *Air and Paint Management Guidelines* listed on the following page.

B. Before paint is poured into the cup or diaphragm pump, **make certain paint is properly mixed**. This is particularly true when mixing multi-component paints. Use a paint shaker, rotary mixer, or paint paddle to achieve a homogeneous mixture. (*Hint:* Split your paint into two parts; the top will be lighter and the bottom will be heavier. Completely stir the bottom half of the paint and slowly add small amounts of the top half into the heavier bottom.)

C. **Strain your paint to remove impurities**. Use a cone strainer or a 100-mesh nylon bag or equivalent strainer.

D. **Thin your paint** according to the manufacturer's specifications.

E. Needle packing cartridges are preset at the factory to proper tension. Replace the cartridge when leaking occurs.

Spraying

A. Air pressure forces paint from the paint container into the fluid chamber of the gun and out through the nozzle where the flow of atomizing air breaks the paint stream into tiny particles, creating the spray.
   1. Needle position controls the amount of paint flowing through the fluid nozzle.
   2. Trigger action controls needle position.
   3. The Fluid Control Knob (DT-3012) at the rear of the spray gun controls trigger action. Turning the knob to the right will reduce the fluid flow, turning it to the left increases the flow.

B. Adjust the pattern by turning the Pattern Control Knob on top of the Spray Head. This knob has a 90-degree range (full fan to round).
   1. Round Pattern - used to draw fine lines with the gun close to the work, for touch-up work, camouflage patterns and painting surfaces in difficult to reach places distant from the spray gun. This pattern is achieved by turning the Pattern Control Knob (DT-128) crosswise the gun.
   2. Full Fan Pattern - used with the spray gun 6"-8" from the work. Overlap not more than 50% of the previous pass. Do not "fog" coat. This pattern is achieved by turning the Pattern Control Knob so that it points toward the handle.
   3. The full fan pattern may be reduced in size by gradually turning the Pattern Control Knob crosswise the gun. ***Fluid flow*** must be ***reduced*** at the same time to maintain even paint distribution.

C. If you are having problems with the operation of your paint gun, check the Trouble Shooting Guide at the end of the manual for possible causes and solutions.

Air and Paint Management Guidelines

Approximate PSI	Application
Thin Coatings ZAHN #2 Test: 16 to 22 seconds Minimum 40 PSI compressor pressure	Machines and implements, small parts, plant maintenance, controlled production work, work in enclosed areas with poor ventilation, priming.
Thin to Medium Coatings ZAHN #2 Test: 22 to 30 seconds 40 to 60 PSI compressor pressure	Dual gun work for all of the above listed applications - will support up to 50' of 3/8" ID hose for each gun. Also for higher production levels of all of the above.
High Solid Coatings ZAHN #3 Test: 37 + seconds 50 to 70 PSI compressor pressure	Marine epoxies, marine enamels, high production steelwork, high production with conveyer lines, large surfaces with thinner viscosity material, latex on wood or metal.
80% Solids Coatings 60 to 80 PSI compressor pressure	Ultra high production levels on extremely large surfaces; un-thinned epoxies, enamels, latex, urethane.

WARNING

Gun must be de-pressurized prior to any maintenance or disassembly procedure. Disconnect all air and fluid hoses prior to performing any maintenance operation.

Cleaning the Detach III™ Spray Gun

A. IF USING A ONE-QUART CUP, FIRST REMOVE THE ONE-WAY CHECK VALVE!!

B. The Detach III™ gun is the only spray gun that allows you to clean the fluid section of the gun without immersing the entire gun in solvent.

1. Unscrew the Connector Stud assembly (DT-014 and DT-015).
2. Pull the Spray Head Assembly forward away from the handle and off the Fluid Needle (DT-3007). **Use caution to avoid damaging or bending the needle**.
3. Wipe the needle and handle clean with solvent and a clean soft cloth.
4. Remove the Pattern Control Ring (AV-101) and Air Cap (AV-189).
5. With the wrench provided, remove the Fluid Nozzle (AV-3006) from the Fluid Tube (DT-3402) and clean thoroughly with brushes.
6. Place the Spray Head into a container of solvent.
7. Use round brush to clean Needle Packing Cartridge (BCR-043).
8. Inspect to make certain that all paint residue has been removed.
9. Wipe all parts dry with clean cloth and reassemble.
10. Replace Fluid Nozzle (AV-3006) into the Fluid Tube (DT-3402) and tighten.
11. When reattaching the Spray Head to the Gun Handle, first carefully insert the needle into the needle packing and gently push the Gun Handle onto the Spray Head.
12. Tighten the Connector Stud assembly.
13. Replace Air Cap and Pattern Control Ring on the Fluid Assembly

If using a gun cleaner, place the Spray Head in the cleaner and cycle. Then follow instructions above making sure all parts are clean and dry before re-assembly.

Spray Gun Performance Is Directly Related To How Well The Gun Is Cleaned After Use

Cleaning Ancillary Equipment

A. If using a 1-Quart Cup, be sure to clean the One-Way Check Valve of all paint residue.

B. Clean the anti-drip feature on the cup lid and be sure this air passage is open.

C. Clean all paint residue from the cup, with particular attention to the gasket and cup lip. (*Hint*: Periodically turning the gasket over prolongs gasket life.)

Lubricate

A. Use Vaseline or a non-silicone grease to lubricate the gun.

B. Lubricate all threaded connections for ease of maintenance.

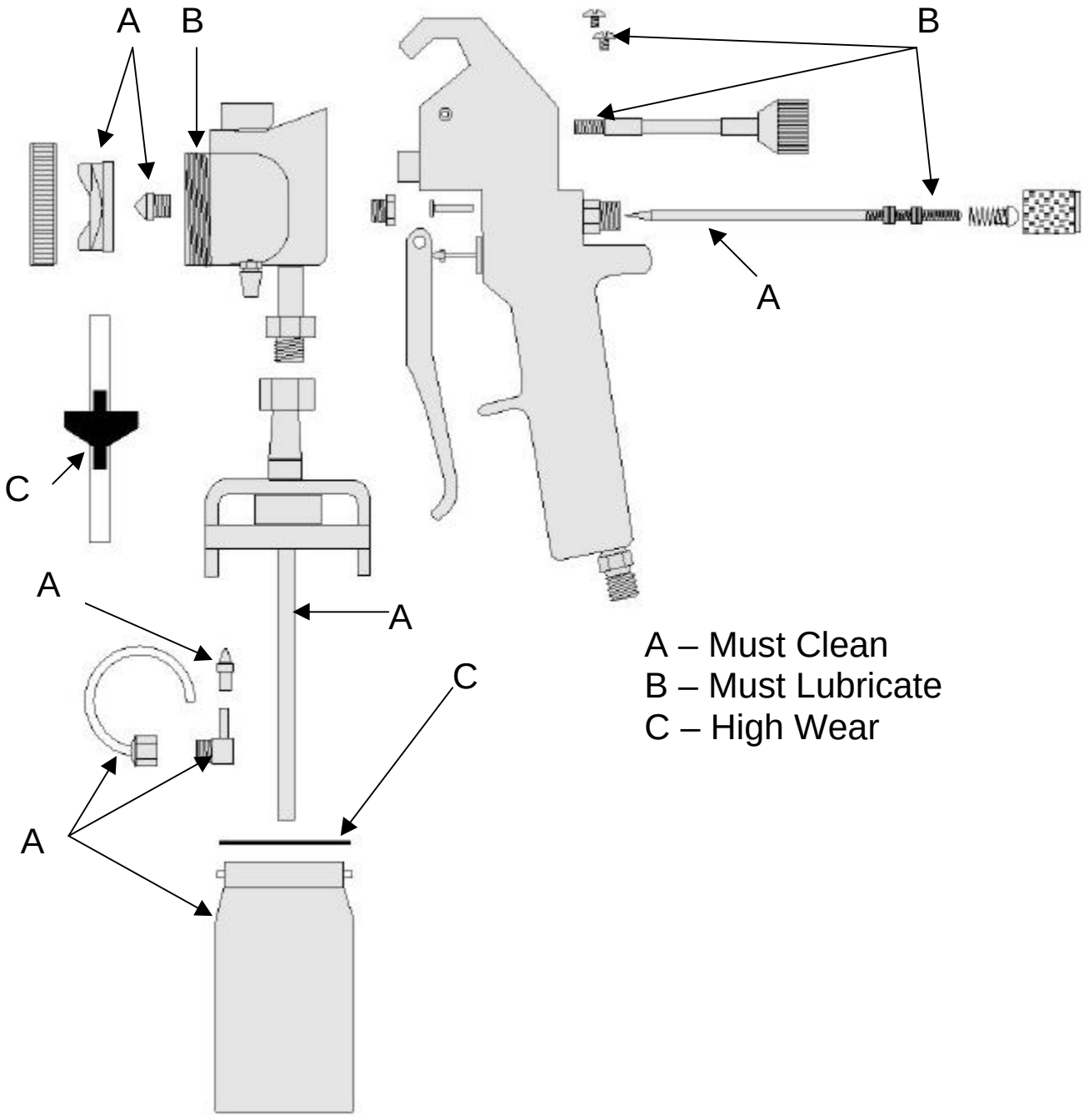
C. Lubricate the Needle only where it passes through the needle packings.

D. **DO NOT** allow lubricant to get into the Fluid Tube, Nozzle, Air Cap, or interior of the paint chamber (areas where paint may come in contact with lubricant).

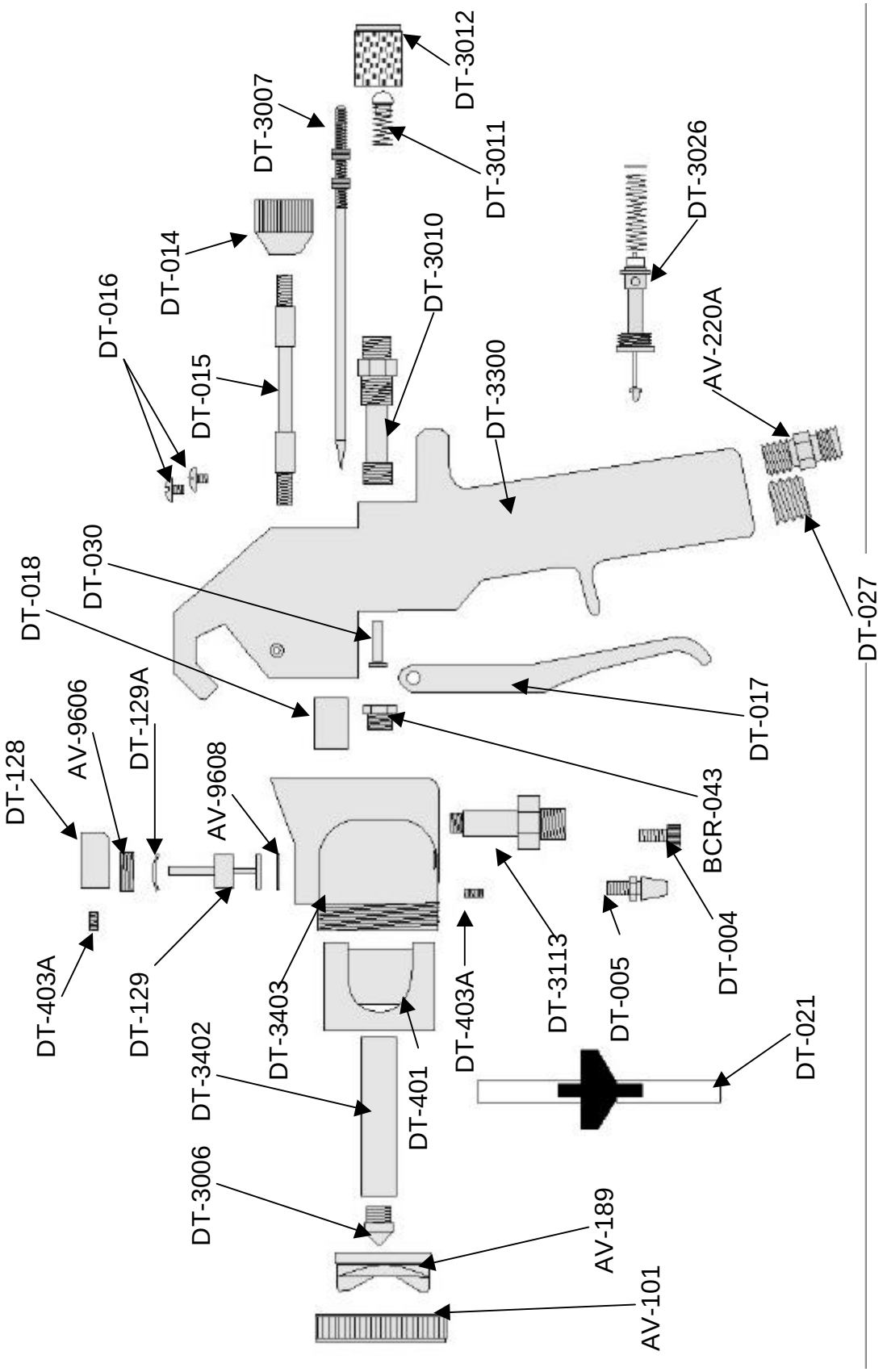
Wear Items

A. Replace Fluid Needle and Nozzle when the Needle extends 3/32″ beyond the Nozzle. Separate the Spray Head from the Gun Handle before changing the Needle.

B. Unscrew the Fluid Control Knob being careful not to lose the Needle Tension Spring. Remove Needle and replace.



Detach III™ Spray Gun Model DT-3000 Illustrated Parts Breakdown



Detach III™ Spray Gun Model DT-3000 Parts List

Part #	NSN	Description
AV-101	4940-01-353-8802	Pattern Control Ring
AV-189	See Note 1	Air Cap
AV-220A	-	Male Nipple, ¼ NPT – ¼ Ball
AV-9606	4940-01-439-9986	Pattern Control Valve Retaining Screw
AV-9608	4940-01-439-9959	Pattern Control Valve Washer
BCR-043	-	Needle Packing Cartridge
DT-004	4940-01-457-3985	Socket Head Cap Screw
DT-005	4730-01-457-4171	Pressure Hose Stem
DT-014	4940-01-457-4033	Connector Stud Knob
DT-015	4940-01-457-4034	Connector Stud
DT-016	4940-01-457-3964	Trigger Screws
DT-017	4940-01-457-3981	Trigger
DT-018	4940-01-457-3969	Atomizer Air Connector
DT-021	4820-01-457-3857	One-Way Check Valve
DT-027	4940-01-457-1954	Low Pressure Channel Plug
DT-030	4940-01-457-1959	Needle Guide Sleeve
DT-128	4940-01-467-7172	Pattern Control Knob
DT-129	4940-01-467-7188	Pattern Control Valve
DT-129A	4940-01-467-7185	Spring Washer
DT-3006	See Note 1	Fluid Nozzle
DT-3007	-	Fluid Needle
DT-3010	-	Fluid Needle Guide
DT-3011	-	Needle Tension Spring
DT-3012	-	Fluid Control Knob
DT-3026	-	Air Control Valve
DT-3113	-	Fluid Fitting
DT-3300	4940-01-457-1940	Gun Handle
DT-3402	-	Fluid Tube
DT-3403	-	Spray Head Housing
DT-401	4940-01-467-7179	Air Body
DT-403A	-	Set Screw

Note 1: Nozzles and Air Caps are assigned NSNs for each particular size. Consult the full price schedule for the specific Nozzle or Air Cap and its NSN.

Nozzle and Air Cap Selection Guide

Select the proper fluid nozzle and air cap for the material to be sprayed. Needle and nozzle are a matched set - machined to act as a valve. Replace the Needle and Nozzle when the Needle protrudes approximately 3/32″ beyond the Nozzle.

Finish	Nozzle	Air Cap	Uses or Coating Type	Compressor Air Pressure*
Ultra Fine Finish	0.7	5	Ultra Fine Finish With Thin Coatings on Small Parts Ultra Fine Touch Up Specialty Applications/Wood Working Water-Based Lacquers, Urethanes	45- 50
Excellent Finish Good Production	1.0	5	Automotive Base or Clear Coat Top Coats For Automotive, Aviation and Marine Use Wood: Lacquers, Stains, Polyurethanes, Varnishes Thin Specialty Coatings With Low Mil Build and Fine Finish Requirements Water-Based Coatings	45-55
Good Finish High Production	1.2	10	Higher Production For The Same Applications As Above Fine Finish With Gloss Alkyd Enamel Primers and Sealers For Automotive, Aviation and Marine Water-Based Coatings	55-65
Excellent Finish Good Production	1.4	12	General Industrial Finishing Zinc-Rich Primers, Water-Based Primers, Flat & Semi-Gloss Alkyd Enamels & Polyurethanes Industrial, Marine, Top Coats, Chlorinated Alkyd Enamels, Acrylic Enamels, and Latex Best with Heavy Primers CARC	65-75
Best Finish High Production	1.7	17	High Production Industrial Marine Primers, High Build Primers, Steel Structures Latex	75-85
Good Finish Higher Production	2.0	20	CARC Industrial Finish Coatings Latex, Stripper, Oil	85-90

*Measured at the gun handle.

Nozzle Size Expressed in Millimeters • 1 Millimeter = .040 (Approximately)					
0.7 = .028	1.0 = .040	1.2 = .048	1.4 = .056	1.7 = .067	2.0 = .080

Detach III™ DT-3000 Troubleshooting Guide

Trouble	Probable Cause	Remedy
Paint Will Not Flow	1. Blockage in fluid nozzle	1. Clean or replace; strain paint
	2. Loss of air pressure in cup	2. Search for air leaks and check cup gasket
	3. Loose fluid nozzle	3. Tighten
	4. Paint tube loose, damaged or clogged	4. Tighten, replace or clean; strain paint
	5. Coating is too thick	5. Thin the coating
	6. Loose Needle Packing	6. Replace Packing Cartridge
Inconsistent Spray Pattern (Spits and Sputters)	1. Running out of paint	1. Fill cup or pot, but never the top ¼
	2. Loose fluid tube	2. Tighten
	3. Loss of fluid pressure	3. Search for air leaks or blockages
	4. Loose needle packing	4. Replace Packing Cartridge
	5. Damaged air pressure tube	5. Air pressure tube requires replacing or close inspection
	6. Dirty/damaged Check Valve	6. Clean/replace Check Valve
Leakage at Front of Gun	1. Damaged fluid needle	1. Replace
	2. Dirty fluid nozzle	2. Clean
	3. Impurities in paint	3. Strain paint
	4. Loose fluid nozzle	4. Tighten
	5. Fluid adjustment screwed all the way out	5. Rotate Fluid Control Knob (DT-3012) on rear of gun clockwise
	6. Needle not firmly seated in the nozzle	6. Check for nozzle obstruction
Distorted Spray Pattern	1. Dirty or damaged air cap	1. Clean or replace
	2. Dirty or damaged fluid nozzle or needle	2. Clean or replace
	3. Fluid nozzle partially clogged	3. Clean
	4. Fluid nozzle not centered with air cap	4. Replace air cap
	5. Air Cap not seated correctly	5. Re-seat air cap

DT-325 - Bench Parts Kit
For Detach III™ DT-3000 Spray Gun

Part #	NSN	Description	QTY
AV-101	4940-01-353-8802	Pattern Control Ring	1
AV-183	4730-01-439-9015	Air Pressure Elbow/Lower	1
AV-184	4710-01-352-2458	Anti-Drip Tube – Aluminum	1
AV-186	5330-01-352-7511	1-Quart Cup Gasket	5
AV-189-12*	4940-01-396-1466	#12 Air Cap (*unless otherwise specified*)*	1
AV-9606	4940-01-439-9986	Retaining Screw	1
AV-9608	4940-01-439-9959	Teflon Washer (pair)	1
BCR-043		Needle Packing Cartridge	1
DT-004	4940-01-457-3985	Socket Head Cap Screw	1
DT-005	4730-01-457-4171	Pressure Hose Stem	1
DT-014	4940-01-457-4033	Connector Stud Knob	1
DT-015	4940-01-457-4034	Connector Stud	1
DT-016	4940-01-457-3964	Trigger Screws (pair)	1
DT-021	4820-01-457-3857	One-Way Check Valve	5
DT-030	4940-01-457-1959	Needle Guide Sleeve	1
DT-128	4940-01-467-7172	Pattern Control Knob	1
DT-129A	4940-01-467-7185	Spring Washer	2
DT-3006-14*		1.4 mm Fluid Nozzle (*unless otherwise specified*)*	1
DT-3007		Fluid Needle	1
DT-3011		Needle Tension Spring	1
DT-3012		Fluid Control Knob	1

* Bench Parts Kits are provided with a 1.4mm Nozzle and a #12 Air Cap. Other standard Nozzle and Air Cap sizes may be substituted at no additional charge. **Please specify Nozzle and Air Cap sizes when ordering.**

DT-327 - High-Wear Maintenance Kit
For Detach III™ DT-3000 Spray Gun

Part #	NSN #	Description	Qty
AV-186	5330-01-352-7511	Cup Gasket - 1 Quart	5
AV-9608	4940-01-439-9959	Teflon Washer (pair)	1
BCR-043		Needle Packing Cartridge	1
DT-021	4820-01-457-3857	One-Way Check Valve	2
DT-030	4940-01-457-1959	Needle Guide Sleeve	2

Notes

AirVerter®